DOCUMENT RESUME

ED 349 500 CG 024 507

TITLE	Postnatal Depression. A Review. EUR/HFA Target 8.
INSTITUTION	World Health Organization, Copenhagen (Denmark). Regional Office for Europe.
REPORT NO	EUR/ICP/MCH-128
PUB DATE	91
NOTE	43p.
PUB TYPE	Collected Works - General (020) -- Information Analyses (070) -- Reports - Research/Technical (143)
EDRS PRICE	MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	*Depression (Psychology); Etiology; Foreign Countries; Incidence; *Mothers; Neonates
IDENTIFIERS	*Postpartum Depression

ABSTRACT

This document contains three reports on postnatal depression. The first, "The Maternity Blues," by Flemming Warborg Larsen, presents a literature review on the topic. It concludes that most women look back at the "blues" as an episode that was brief, unpleasant, and difficult to explain. The second report, "Postnatal Depressions," by Lene Lier, also a literature review, focuses on the topics of incidence, symptomatology, obstetrical aspects, psychodynamic aspects, family aspects, mother-child relationship, biological aspects, social and environmental aspects, interactive factors, and prevention and intervention. The third report, "Depressed Mood in the Week Following Childbirth," by Lier and four others (Susanne Houd, Henrik Bronnum-Hansen, Finn Kamper Jorgensen, and Flemming Warborg Larsen) describes a study of Danish women who had given birth. In the study 2,586 women answered a questionnaire which was administered 3 months after delivery and which identified variables that contributed significantly to depressed mood/sadness in the first week after delivery. Variables contributing to depressed mood included increased emotional/physical strain in women giving birth to their first child; women having to care for themselves during pregnancy; ambivalent or negative experience of delivery; a too busy staff at the maternity ward; insufficient support with breastfeeding; and having a child admitted to the pediatric department. All three reports include references. (ABL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

EUR/ICP/MCH 128
1500n
ENGLISH ONLY
UNEDITED

WHO

REGIONAL OFFICE FOR EUROPE

ED349500

POSTNATAL DEPRESSION

A review

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY

Frank Treakston

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

BEST COPY AVAILABLE

SCHERFIGSVEJ 8
DK-2100 COPENHAGEN Ø
DENMARK

TEL.: (45) 31 29 01 11
TELEFAX: (45) 31 18 11 20
TELEX: 15348

CG0245O7

1991

EUR/HFA TARGET 8

This activity was organized by the WHO Regional Office for Europe in collaboration with the Danish Institute for Clinical Epidemiology to promote work aimed at achieving the following target in the health for all strategy.[a]

TARGET 8

REDUCING RATES OF MATERNAL MORTALITY

By the year 2000, maternal mortality in the Region should be less than 15 per 100 000 live births

Index terms

PUERPERAL DISORDERS
PSYCHOTIC DISORDERS
DENMARK

All rights in this document are reserved by the WHO Regional Office for Europe. The document may nevertheless be freely reviewed, abstracted, reproduced or translated, but not for sale or for use in conjunction with commercial purposes. Any views expressed by named authors are solely the responsibility of those authors. The Regional Office would appreciate receiving one copy of any translation.

[a] *Targets for health for all.* Copenhagen, WHO Regional Office Europe, 1985 (European Health for All Series, No. 1).

CONTENTS

Page

Foreword i

The maternity blues. A review by Dr Flemming Warborg Larsen 1

Postnatal depressions. A review by Dr Lene Lier 12

Depressed mood in the week following childbirth. A survey of 2586 women by Dr Lene Lier, Susanne Houd, Henrik Bronnum-Hansen, Dr Finn Kamper-Jorgensen and Dr Flemming Warborg Larsen 26

FOREWORD

In the pursuit of lowering maternal and perinatal mortality rates, health services often have not given sufficient attention to the morbidities associated with childbirth. The strategy for health for all puts emphasis on health promotion. The time around birth is an opportune time to promote the health of women and their families.

The Regional Office for Europe of the World Health Organization has collaborated with the Danish Institute of Clinical Epidemiology in a study of postnatal depressions, a common and disabling condition affecting 15-20% of childbearing women. Virtually nothing is known of the consequences to the family, although it is clear that the relationships both with the partner and with the new baby must be affected. Health services could do much to promote the health of these families through:

- educating health personnel about the problem;
- establishing and supporting parent groups before and after childbirth to provide mutual aid;
- providing therapeutic facilities for depressed mothers.

It is hoped that this document will help to increase awareness of this important health problem of women and their families.

Marsden G. Wagner

THE MATERNITY BLUES

A review by Dr Flemming Warborg Larsen[a]

Introduction

Transient, mild depression in the first few days after delivery is so common and apparently benign that only recently has it begun to be the subject of scientific investigation. Victoroff (1) may have been the first to do so.

References to the mild, postpartum dysphoreas first appeared in the medical literature in the late nineteenth century (2). The term "milk fever" was used by Savage in 1855, since the dysphorea seemed to coincide with the onset of lactation. Another synonym, "third day blues", was employed for similar reasons. Symptoms such as insomnia, restlessness and confusion were described as occurring transiently in a large proportion of women post partum. Yalom et al. (3) found that two thirds of 39 women interviewed had at least one episode of weeping during this ten-day period, and commented that these tears were often accompanied by a mood of anger or joy rather than sadness. They entitled their article "postpartum blues syndrome", and this rather inappropriate term has been adopted by most subsequent authors. The phrase "the maternity blues" while evocative and now in common usage perhaps fails to convey that many women are also elated at this time. Hamilton (2) has coined the term "the transitory syndrome" to capture the evanescent nature of postpartum mood changes.

Nosological status: illness, syndrome or normal reaction?

Women who experience the maternity blues do not regard themselves as ill, nor do their relatives or attendants. Whether a condition is deemed to be an illness depends on the degree of therapeutic concern it arouses, and the maternity blues manifestly fail to elicit such feelings (4).

There are different aspects of postpartum reactions. First, postpartum psychosis is a relatively rare disorder following childbirth with symptoms similar to general psychiatric reactions. Second, chronic depression syndrome or moderate depression disorder are more debilitating than the blues and more common than postpartum psychotic reactions. This still poorly defined syndrome is characterized by despondency, tearfulness, feelings of inadequacy, guilt, anxiety, irritability, and fatigue. Third, postpartum blues, the name most commonly used to describe the weeping and emotional lability which occur during the first postpartum week.

The scepticism or discussion about postpartum disorders as a clinical entity continues today. In the latest edition of the Diagnostic and Statistical Manual (DSM-III 1980), the category *psychosis with childbirth* was eliminated, because "there is no compelling evidence that postpartum psychosis is a distinct entity". The non-psychotic "milder" reactions are respectively categorized within the neurotic-personality type disorders. According to this view childbearing may act as a precipitating factor or a trigger mechanism to almost any kind of mental illness (5).

[a] Department of Child Psychiatry, University Hospital of Copenhagen.

Clinical description

Until recently, information about the maternity blues was mainly derived from brief descriptions in obstetric textbooks which usually confined themselves to accounts of episodes of weeping and dysphoria occurring on the third or fourth day (4). Many early studies were based on single interviews, others within the first ten days following birth or within 2-8 weeks post partum (6-9).

It was not until Yalom et al. (3) examined their subjects each day that the wide variety of mental phenomena of the early puerperium became apparent. Other investigators have had alternate day contact. Davidson (10) had daily interviews on average the first four days post partum before the women were discharged. Nott et al. (11) interviewed 27 patients on the day after delivery and on alternate days for the first week, and thereafter at home every third day for 5-10 weeks. George et al. (12) interviewed their patients every second day the first week post partum. More recently Ballinger et al. (13), Handley et al. (14) and Stein (15) examined their patients daily, and it would seem in such a rapidly fluctuating condition that daily contact with the subjects provides the best method of assessing mental changes.

The spectrum of symptoms

What symptoms should be included in the maternity blues? No clear answer can be given to that question. Much of the confusion about the prevalence, both of individual symptoms and of overall ratings, are caused by the fact that no valid and reliable rating scale or checklist existed until now. Hamilton (2), Pitt (16) and Stein (17) have all developed symptom checklists, either based on life-long experiences by midwives or based on modifications of questionnaires prepared in connection with different diseases or disorders. By reviewing the literature about maternity blues it appeared that different authors had utilized one or more of 13 different rating scales, mood adjective checklists and personality inventories. There is still no consensus about the symptoms which should or should not be included (4). Most authors rate one or more of the following symptoms: insomnia, weeping, depression, anxiety, headache, confusion, fatigue (4). Just because particular psychological changes occur during the postnatal period does not necessarily mean that it is a part of the blues syndrome. All the symptoms listed occur more or less frequently in the general population, and for a particular symptom to be included as a part of the blues it is necessary first to establish that it began or was exacerbated in the early puerperium and secondly to demonstrate a coherent pattern of change. In a description of the puerperal women, Douglas (18) stated: "She is not so different from any patient who has had an operation or is seriously ill being withdrawn in her interest in the outside world, being more narcissistic than usual, so it can be assumed that the physical changes of labour contribute to her state". Liakos et al. (9) used the Beck Depression Inventory and the Middlesex Hospital Questionnaire (MNQ) in connection with 58 women who gave birth and a control sample of postoperative women. The postoperative sample showed their highest scores in the Beck scores and the depression scores of the MHQ.

In an interesting but methodologically unclear paper, Levy (19) compared the manifestations of the blues between four different groups: maternity, gynaecological, female surgical and male surgical patients. She used Stein's blues questionnaire to measure the incidences and manifestations of the blues between the different groups of patients. It was filled in by every patient

in the study each day for the first delivery/operative week. She found that the condition appeared to be similar in all of the female groups (57-59%). Men did not appear to suffer from the blues in the same way as the women although they shared some of the dysphoric symptoms (20%).

Timing of the episode

Detailed daily examination of women in the postnatal period reveals that episodes of dysphoria can occur on almost any day in the first week and for several weeks after delivery (4). Different opinions have been claimed about when the incidence of the blues was highest. Most studies of the maternity blues cease on the seventh, eighth or tenth day, and it is generally found that these episodes are uncommon after the tenth day (4). However, weeping and depression may persist for several weeks (16). Stein (4) has recorded a case of a depressed mood lasting 17 days in a puerperal woman. There is also no agreement as to when symptoms are most frequent or severe. The term *the third day blues* was used by Moloney (20) and Pitt (16). Other authors observed a peak on the fourth day (14). Both Robin (6) and Stein et al. (21) identified the sixth day as the peak day, while Yalom et al. (3) found a general increase of symptoms from the fifth to the tenth day but no clear-cut peak.

Careful analyses of the reports of individual symptoms reveals that these do not necessarily have the same time course as assumed by Stein (15). Another reason for the confusion over timing of the blues episodes may relate to the fact that the pattern of symptoms that is obtained is shaped by the structure and content of the rating scale and the emphasis it places on particular symptoms. Furthermore, even if most women have an abrupt beginning and end to their disturbances, a minority manifests symptoms every day (3,14,15). Melges (22) examined 100 patients who were selected according to two criteria: (1) the onset of psychiatric illness took place within one month pre partum to three months post partum, and (2) the psychiatrist in charge of the patient deemed childbearing to be a significant factor in the onset or exacerbation of mental illness. Some 64% of the postpartum psychiatric syndromes experienced the onset of illness within the first ten postpartum days. Of peculiar interest was that three patients had postpartum equivalent reaction secondary to the adoption of an infant. Within a few days after the arrival of the baby each of these patients became confused and conflicted about their capacity to mother, showing great lability of affect. Curiously, all three patients were highly disorganized and perplexed despite the fact that no puerperal physiological changes were taking place, suggesting that such confusion can have a non-organic basis.

What is a case of the blues?

The problem is that there is no sharp difference between a case and a non-case of the blues. Usually daily scores of different blues symptoms are totalled and converted into global ratings and this is the way in which to decide whether a woman is suffering from the blues. The validity of such global, compared scores of severity can be questioned. In most cases the rating scales have been developed for other purposes, and it can therefore be difficult to distinguish between incidence, severity or duration of individual symptoms (4). It appears that different authors have used different levels of severity to define their case. In most published studies an overall incidence

of 50-70% has been found (3,10,15,16,23,24). For the time being, there are no ideal standard methods to estimate the blues. Optimally, such a scale should be relatively short and suitable for self-rating. It should cover both depression and anxiety and should be reliable and valid in postpartum situations. Two scales have been specifically created to estimate the maternity blues. Pitt (16) used eight symptoms which were described originally by Hamilton in 1962 (2). Stein made a list of 13 common symptoms, but recently the validity has been questioned by Levy (19).

Relationship to postnatal depression

For a long time the question whether a woman with a significant postpartum blues reaction was a high-risk patient for developing a postpartum depression or a postpartum psychiatric reaction was avoided. Yalom et al. (3) conducted a telephone interview with 22 of 39 patients who were followed up eight months post partum. With one exception none of the women had required any psychiatric treatment in this time interval, indicating that the postpartum blues syndrome is apparently self-limited and relatively benign. The one patient still had frequent, short episodes of crying and complaints of irritability, anxiety and emotional discontrol. Pitt (7) sent a questionnaire to more than 300 patients 6-8 weeks post partum and found that 10.8% had puerperal depression. At the time of the study only 5 of the 33 depressed patients were known to be receiving treatment for their symptoms; 21 depressives of 30 from whom the information was obtained and 12 of 28 controls experienced transitory tearfulness (= the blues) while in hospital after delivery. At follow-up one year later 28 of the depressives completed the questionnaire; 16 appeared to have fully recovered but the remainder (3.9% of total sample) seemed to have made little or no improvement. The probably significantly higher incidence of maternity blues in the depressive group may represent a true association between the two conditions.

In 1983 Neugebauer (25) reanalysed Pitt's original data and recommended that future references to Pitt's rate of late puerperal depression should use an adjusted figure of 19.7% instead of the reported rate of 10.8%. Kaij & Nilsson (26) disagree about ascribing prognostic value for later neurotic reactions to the blues, because disorder found in 70-80% of women is hardly compatible with any prognostic value. In their opinion the blues syndrome is of objective rather than subjective importance, and the first postpartum week is on the whole free from pathological psychiatric symptoms. In their study of emotional illness following childbirth, they noticed that actual depressive symptoms, including psychomotor retardation, lack of interest in the child, and concern about practical and emotional problems encountered after returning home may imply the first sign of postpartum neurotic reactions. Zajicek & Wolkind (27) interviewed 114 women before and after delivery with the purpose to study whether there was a continuity of emotional reactions before, during and after pregnancy. The most striking finding was that emotional disorder in late pregnancy is more likely to be experienced by those women in whom there was evidence of pre-pregnancy psychological difficulties and symptomatology. Fourteen months after the pregnancy the majority still report presence of emotional distress, thereby showing a continuity of emotional reaction.

Ballinger et al. (13) assessed emotional disturbance in a group of women in the first few days following childbirth, two months later and one year following childbirth. In all, 25% of the subjects on day one and 52% of subjects on day three were rated 2 or more for some abnormality of mood or

anxiety on a 5-point scale. There was no consistent pattern of change from day one to day five, and the most noticeable feature was rapid fluctuation over the visual analogue scale. At follow-up one year later, 57% of the women who were depressed at two months still obtained scores of 5, indicating a prolonged episode of disturbance.

Kendell et al. (28) asked 81 women to rate their mood on a set of six visual analogue scales every day for the first three weeks after childbirth. Women who became clinically depressed later in the puerperium had higher depression and lability ratings and a more pronounced day-five peak than those who did not. This implies that there is a connection between the mood disturbances of day five and milder postnatal depressions of the kind described. It also suggests that permanent depression or lability of mood on or near the fifth postpartum day may be a valuable way of identifying women at risk of more serious depressive symptoms later on. For this reason they explored the predictive value of high ratings on the depression and/or lability scales on days five, six or seven in 81 subjects. The results were not very impressive: 30% false positives and 30% false negatives. An investigation carried out by 54 general practitioners in the United Kingdom identified potential risk factors for depression after childbirth in a sample of 618 women. The most important predictive factors were stress after confinement and thereafter a severe attack of the five-day blues (29).

In contrast, Oakley & Chamberlain (30) interviewed 55 primigravidae during pregnancy and the early postpartum month. In the postpartum interviews four syndromes were described under the heading of postnatal depression by the women themselves, their husbands, relatives and friends or by the medical staff involved. The syndromes were postnatal blues (84%), anxiety state (81%), depressed mood (33%) and depression (24%). The blues was clearly seen as a short-lived syndrome. There was no relation between postnatal blues, postnatal anxiety states or postnatal depression and reports of depressed mood or depression in pregnancy. From the prospective study of psychiatric disorders associated with childbearing in Edinburgh, Cox et al. (31) reported that 13% of 105 women had a depressive illness stated at interview 3-5 months post partum. Depression was also the most commonly reported symptom in the week after delivery, and in 7 of the 16 women with severe postpartum blues the depression persisted, and in 4 lasted several months. The blues is not correctly described, therefore, as trivial or fleeting and may in fact be an important predictor of women at risk of developing a depressive illness later on. Although those women were distressed and bewildered by their inability to cope, they only rarely reported their depressed mood to their general practitioner.

Clinical correlations to the blues

Although many clinical correlations to the blues have been found only few of these have been reported by more than one research group. One exception has been the correlation between the blues and mental disturbances in late pregnancy (10,11,15,23). A history of neurotic depression (13,15) and previous postpartum reactions (3,15) seem to predispose to serious maternity blues. Only Yalom et al. (3) and Nott et al. (11) have reported an increased incidence of blues among primiparae. Other investigators have not been able to demonstrate any correlation with parity (13,16,28). Problems about breastfeeding do not show any correlation (10,13,28). No obstetrical variable has been found which correlates with the blues (8,10,13,15). However,

Ballinger (32) has reported that anxiety and depression ratings were significantly higher in the caesarean section group immediately after delivery, but by day five the ratings on the employed scale were essentially the same. The relationship between the blues and the women's attitude to pregnancy and experience of labour has been inconsistent. Some investigators did not find any correlation (3,11,16). Davidson (10) divided his blues women in two separate classes: the severe blues (N=15) and the mild blues (N=11). The only significant difference in the mild group was the presence of a longer labour, which was probably due to the greater number of primiparae in this group. Oakley & Chamberlain (30) found significant links between postnatal blues and epidural analgesia, dissatisfaction with the second stage of labour and instrumental delivery. The age of the mother, her personality, social class, housing difficulties or factors concerning the child have not been found to correlate (3,10,11,13,16,30).

An interesting question has been whether the blues phenomenon only occurs in western countries. Davidson (10) has described postpartum reactions in a group of Jamaican women; 60% were found to experience some emotional upset during the first 11 days post partum, mostly on days 1-3. In form the blues did not differ from the condition reported in other cultures, but it was felt that they had a different meaning in this population as a function of higher parity. Harris (23) interviewed 50 Tanzanian women 2-10 weeks after delivery. A total of 38 out of 50 mothers showed some evidence of maternity blues, with a maximum incidence on the seventh day after delivery. In an anthropological critical review Stern & Kruckman (33) advocate that more attention should be given to the impact of the cultural patterning of the postpartum period, that means the structure and organization of the family group and role expectations. In their opinion the baby blues and possibly mid-levels of depression may represent a culture-bound symptom of the West resulting in part from modern birthing practices and from lack of clear role definitions and provision of social support to the mother. Their review of the ethnographic literature on childbirth showed remarkably little evidence for postpartum depression in non-western settings and they make references to investigations carried out in China, Nepal, Nigeria and south-east Asia. It may be, they claim, that the phenomenon of baby blues or postpartum depression is a form of legitimate social deviance resulting from perceptions of role helplessness, and therefore can be analysed as a culture-bound syndrome.

Their hypothesis is that the negative outcomes of depression and baby blues in the United States result from the relative lack of social structuring of postpartum events, social recognition of role transition for the new mother, and instrumental support and aid for the new mother. In their opinion the phenomenon of mild postpartum depression remains undocumented in the cross-cultural literature. Descriptions of postpartum activities suggest that there may be basic components which provide necessary social support and which cushion or prevent the experience of postpartum depression - regardless of whether its etiology is biological, psychological or social. These components include structuring of a distinct postpartum time period, protective measures and rituals reflecting the presumed vulnerability of the new mother, social seclusion, mandated rest, assistance in tasks from relatives and/or midwife, and social recognition through rituals, gifts etc. of the new social status of the mother.

Biological considerations

The fact that severe mental disorders occur post partum, premenstrually, at menopause, and with the use of some oral contraceptives, has been at least suggestive of some relationship between the hypothalamic-pituitary gonadal axis and these reactions. The endocrine changes occurring before, at and immediately after parturition are unique in their magnitude, rapidity and complexity of regulation. Many hypotheses of hormonal etiology of postpartum mental disorder have been put forward over the years.

The relationship between these changes and psychosocial as well as psychopathological changes occurring concomitantly has not yet been established. In 1968 Yalom et al. (3) described the postpartum blues syndrome as occurring in 66% of their 39 subjects. They found that the incidence of postpartum depression was found to be associated with various endocrine related factors (menarche, dysmenorrhoea, irregularity, length of flow and premenstrual tension). It would therefore seem reasonable to hypothesize that these same women would be prone to psychiatric illness at another time when drastic endocrine changes were occurring, e.g. menopause. Pitt (16) concluded in her investigation that the lack of any significant association with infection or other obstetric complication left as the most likely factor the profound endocrine changes which follow parturition. The occurrence of two thirds of the cases within four days of parturition, with a peak incidence on the third day, and the probably significant association with lactation problems among breastfeeders, suggest that the relevant change might be the precipitate fall in the progesterone and estrogen levels post partum (16).

The relationship between mood disturbances and free and total plasma tryptophan in postpartum women has been studied by Stein et al. (21). The synthesis of brain 5-hydroxytryptamine (5-HT) may be decreased in depressive illness and the precursor of central 5-HT is brain tryptophan, which is probably derived from free plasma tryptophan. Lowered levels of free plasma tryptophan have been reported in depression and that was the reason for examining the relationship between free plasma tryptophan levels and affective changes in puerperium. A small group of 18 women in the postnatal ward participated. Patients who appeared clinically to have severe depressions had free plasma tryptophan levels similar to those found in depressive illness. Total plasma tryptophan did not correlate with any of the clinical data. The biochemical mechanisms causing these alterations in tryptophane metabolism are unknown.

Nott et al. (11) tested the common supposition that postpartum emotional disturbance is related to hormone changes. A group of 27 normal pregnant women was assessed before delivery and 16 times in six weeks following delivery. Plasma LH,FSH, total estrogen, progesterone and prolactin were assessed. Of the 30 possible correlations examined, only four reached a level of significance. For instance the greater the progesterone drop the more likely the subjects were to rate themselves depressed within ten days, and the lower the estrogen level post partum the more sleep disturbance was reported. They could not find any clear relation between hormone changes and the appearance of particular symptoms such as sleeplessness. They believe that further enquiries would be more profitably directed to this kind of question rather than to the overall relationship between hormone levels and the whole syndrome known as maternity blues.

Handley et al. (14) studied mood changes in puerperium and plasma tryptophan and cortisone concentrations in 18 women daily during the second to the fifth postpartum day. Over the period plasma free tryptophan concentrations tended to rise and plasma cortisone concentrations to decline. There was a positive correlation between plasma free tryptophan concentrations and mood state. It has been showed that cortisone concentrations may increase during depressive illness. A significant positive correlation was detected between free tryptophan concentration and mood. Interestingly this extended to elevation as well as depression of mood. The finding that a low free tryptophan concentration was associated with depression of mood was confirmed by the work of Stein et al. (21).

Ballinger et al. (13) investigated the emotional disturbance following childbirth and urinary excretion of cyclic AMP (adenosine 3,5,cyclic monophosphate). The urinary excretion of cyclic AMP has been found by some works to be increased in mania and decreased in depression. It has also been shown that cyclic AMP acts as a second messenger in many hormonal interactions with appropriate target cells. The mean values for urinary cyclic AMP excretion was significantly higher on day three compared to day one. In the same period twice as many patients were rated for some abnormality of mood or anxiety indicating the blues. The findings suggest that the emotional disturbances at this time may be associated with biochemical or hormonal changes.

George et al. (12) investigated the relationship between serumprolactin and the components of the puerperal neurotic syndrome, known as the postpartum blues, in 42 pregnant women with no previous history of mental illness. They found a significant relationship between serum-prolactin and each of three mood variables over the six days post partum (anxiety, tension, worries), and over four days for depression. They suggest that prolactin or its central aminergic regulating system is associated with neurotic puerperal disorders. Kuevi et al. (34) investigated 44 women in the immediate postpartum period in order to establish whether postpartum blues could be associated with abnormal circulating hormone concentrations and circulation levels of monoamines; 52% of the mothers showed periods of emotional lability, but there was no significant correlation between plasma concentrations of FSH, prolactin, estrogen, estradiol, cortisol or progesterone and the incidence of postpartum blues. The only significant finding was decreased levels of plasma catecolamines measured on the day when a transient, mild depression was in evidence. An interesting question is whether or not these findings reflect any changes in central aminergic transmission or whether they are a causative factor in postpartum blues. Nobody knows if there is any parallelism between brain and plasma amines.

Feksi et al. (35) investigated hormone levels in saliva from 40 breastfeeding, married, primiparous women. The five mothers who experienced most severe maternity blues were matched with five mothers who were symptom-free. On the day of symptoms, concentrations of progesterone and estradiol were significantly higher in the experimental group, but mean cortisol concentrations did not differ between the groups. In a recent review the possible correlation between maternity blues and newer developments has been discussed. These newer developments are the plasma concentrations of beta-endorphin, the platelet alfa-2-adrenoceptor capacity, the brain alfa-2-adrenoceptor capacity, and the opioid receptor active components. Despite the attractiveness of the hypotheses of linking hormonal changes with puerperal mental disorders, no useful conclusions whether prognostic, prophylactic or therapeutic have emerged from the older studies (36).

Etiological considerations

Different formulations have appeared in the literature to explain the phenomenology of the blues. On the one hand Moloney (20) has suggested they were minor depressive episodes while Kane et al. (8) and Pitt (16) have favoured an explanation of an acute organic reaction. Against this is a lack of any objective evidence for cognitive impairment (3). Robin (6) investigated 25 normal mothers in the lying-in period and found through psychological investigations an impairment of abstract or conceptual thought, postulating that puerperal changes represented an organically determined mental reaction. Yalom et al. (3) did not find support for the view that confusion frequently occurs during the early puerperium. None of their subjects demonstrated significant confusion or intellectual impairment. There were a few isolated occurrences of impairment of recent memory, which were associated with narcotic medication or a previous sleepless night. Kane et al. (8) have shown subjective evidence of anxiety and/or depression and cognitive dysfunction in 64% of a sample. However, the objective measures used did not give strong support to these complaints, although cognitive dysfunction was striking on mental status testing in several instances described. Despite a great deal of research there does not appear to be any evidence linking the blues with the events of labour or delivery, neither social class, marital status nor other personal or environmental factors. Because of the lack of social and psychological correlations it has been tempting to suggest that some biological factor was responsible. So far, however, no useful conclusions have emerged from the current studies.

Summary and conclusion

Most women look back at the blues as an episode that was brief, unpleasant and difficult to explain (4). Pitt (16) has described the blues as a trivial, fleeting, commonplace disorder, but on the other hand recommended that pregnant women should be warned to expect it, so that they are not taken by surprise. Robson & Kumar (37) found that taking part in the investigation and being able to talk about fears and anxieties may have helped prevent postnatal depression. The most important implication of the blues is the possible relationship to postpartum depression. First, it is not possible always to predict what type of woman develops a postpartum depression, and secondly, only those with a severe depression receive psychiatric help. This means that most women with prolonged anxiety/depressive symptoms do not receive treatment. Apart from the effect on the woman herself, the effect on the relationship to her husband and the relationship or interaction between the mother and child should not be forgotten. While the effect of separation from the mother-figure has been well documented, the effect of the depressed mother is only beginning to be assessed (37).

The fact that more than 50% of pregnant women experience the blues symptoms, that there seems to be a correlation between the severest mood disturbances of the first days and later postpartum depressions, and that few women apparently seek help for their depression/anxieties all justify further research in this area. Until more about the etiology and causes is known, midwives and doctors should prepare their pregnant patients about possible mood disturbances following childbirth.

REFERENCES

1. Victoroff, V.M. Dynamics and management of para partum neuropathic reactions. Diseases of the nervous system, 13: 291-298 (1952).
2. Hamilton, J.A. Post partum psychiatric problems. St. Louis, MO, The C.V. Mosby Co, 1962.
3. Yalom, I.D. et al. "Postpartum blues" syndrome. Archives of general psychiatry, 18: 16-27 (1968).
4. Stein, G.S. The maternity blues. In: Brockington, F.F. & Kumar, R., ed. Motherhood and mental illness. London, Academic Press, 1982.
5. Steiner, M. Psychobiology of mental disorders associated with childbearing. Acta psychiatrica et neurologica Scandinavica, 60: 449-464 (1979).
6. Robin, A.A. The psychological changes of normal parturition. Psychiatric quarterly, 36(1): 129-150 (1962).
7. Pitt, B. "Atypical" depression following childbirth. British journal of psychiatry, 114: 1325-1335 (1968).
8. Kane, F.J. et al. Emotional and cognitive disturbance in the early puerperium. British journal of psychiatry, 114: 99-102 (1968).
9. Liakos, A. et al. Depressive and neurotic symptoms in the puerperium. (The "four-day blues" in Greek women). In: Psychosomatic medicine in obstetrics and gynaecology. 3rd International Congress. London, 1971. Basel, Karger, 1972, pp. 343-346.
10. Davidson, J.R.T. Post-partum mood change in Jamaican women: a description and discussion on its significance. British journal of psychiatry, 121: 659-663 (1972).
11. Nott, P.N. et al. Hormonal changes and mood in the puerperium. British journal of psychiatry, 128: 379-383 (1976).
12. George, A.J. et al. Prolactin secretion and the postpartum blues syndrome. British journal of pharmacology, 70: 102 (1980).
13. Ballinger, C.B. et al. Emotional disturbance following childbirth: clinical findings and urinary excretion of cyclic AMP (adenosine 3'5' cyclic monophosphate). Psychological medicine, 9: 293-300 (1979).
14. Handley, S.L. et al. Mood changes in puerperium, and plasma tryptophan and cortisol concentrations. British medical journal, 2: 18-22 (1977).
15. Stein, G.S. The pattern of mental change and body weight change in the first postpartum week. Journal of psychosomatic research, 24: 165-171 (1980).
16. Pitt, B. "Maternity blues". British journal of psychiatry, 122: 431-433 (1973).
17. Stein, G.S. An enquiry into the nature and aetiology of the maternity blues syndrome. Thesis, London University, 1979.
18. Douglas, G. Some emotional disorders of the puerperium. Journal of psychosomatic research, 12: 101-106 (1968).
19. Levy, V. The "third day blues". Midwives chronicle & nursing notes, Nov. 1984, pp. XIV-XV.
20. Moloney, J.C. Post partum depression or third day depression following childbirth. New Orleans child and parent digest, 6: 20-32 (1952).
21. Stein, G. et al. Relationship between mood disturbances and free and total plasma tryptophan in postpartum women. British medical journal, 11: 457 (1976).
22. Melges, F.T. Postpartum psychiatric syndromes. Psychosomatic medicine, 30: 95-108 (1968).
23. Harris, B. Maternity blues (correspondence). British journal of psychiatry, 136: 520-521 (1980).

24. Saks, B.R et al. Depressed mood during pregnancy and the puerperium: clinical recognition and implications for clinical practice. American journal of psychiatry, 142: 728-731 1(985).
25. Neugebauer, R. Rate of depression in the puerperium (correspondence). British journal of psychiatry, 143: 421-422 (1983).
26. Kaij, L. & Nilsson A. Emotional and pscyhotic illness following childbirth. In: Hoswells, J.G, ed. Modern perspectives in psycho-obstetrics. Edinburgh, Oliver and Boyd, 1972, pp. 364-383.
27. Zajicek, E. & Wolkind, S. Emotional diffculties in married women during and after the first pregnancy. British journal of medical psychology, 51: 379-385 (1978).
28. Kendell, R.E. et al. Mood changes in the first three weeks after childbirth. Journal of affective disorders, 3: 317-326 (1981).
29. Playfair, H.R. & Gowers, J.I. Depression following childbirth - a search for predictive signs. Royal College of General Pratitioners. Journal, 31: 201-208 (1981).
30. Oakley, A. & Chamberlain, G. Medical and social factors in postpartum depression. Journal of obstetrics and gynaecology, 1: 182-187 (1981).
31. Cox, J.L. et al. Prospective study of the psychiatric disorders of childbirth. British journal of psychiatry, 140: 111-117 (1982).
32. Ballinger, C.B. Emotional disturbance during pregnancy and following delivery. Journal of psychosomatic research, 26: 629-634 (1982).
33. Stern, G. & Kruckman, L. Multi-disciplinary perspectives on post-partum depression: an anthtropological critique. Social science and medicine, 17: 1027-1041 (1983).
34. Kuevi, V. et al. Plasma amine and hormone changes in "post-partum blues". Clinical endocrinology, 19: 39-46 (1983).
35. Feksi, A. et al. "Maternity blues" and hormone levels in saliva. Journal of affective disorders, 6: 351-355 (1984).
36. Swyer, I.M. Postpartum mental disturbances and hormone changes (editorial). British medical journal, 290: 1232-1233 (1985).
37. Robson, K.M. & Kumar, R. Delayed onset of maternal affection after childbirth. British journal of psychiatry, 136: 347-353 (1980).
38. Richman, N. Behaviour problems in pre-school children. Family and social factors. British journal of psychiatry, 131: 523-527 (1977).

POSTNATAL DEPRESSIONS

A review by Dr Lene Lier[a]

Introduction

Postnatal depressions, i.e. depressions arising during the months after delivery, should be distinguished from the frequent and brief changes of mood that occur during the first week after confinement, known as "the maternity blues".

In some cases there is, undoubtedly, a relation between "the blues" and later depressive symptoms, especially in such cases where there has been a lasting and pronounced emotional lability within the first weeks after delivery. Most cases of "the blues" are, however, reversible and are not considered a depression by the women themselves.

Depressions arising in the months after childbirth vary with regard to time of onset, duration, and symptomatology. While psychotic depressions are seldom (1-2%), non-psychotic, so-called neurotic depressions are frequent (10-20%). There is, however, considerable uncertainty regarding the postnatal neurotic depressions - their background, their relation to depressive states at other times in life, and their influence on family life, on the mother-baby relationship and thus on the development of the infant - and on the possibilities for prevention and treatment. In the introduction to the book Motherhood and mental illness (1) the editors write: "Yet, in spite of increasing awareness of the risk of neurotic disturbance in childbearing women, the majority of sufferers neither seek, nor are given, any help at a critical time for themselves and their families. The ways in which childbearing may be linked with psychiatric disorder remain uncertain and controversial. The antenatal period would seem to provide an ideal opportunity for prevention, but how and in whom?".

This review on neurotic depressions following childbirth will focus on newer studies concerning incidence, symptomatology, obstetrical aspects, psychodynamic and family aspects, biological aspects, social and environmental aspects, and prevention and intervention.

Incidence

The fact that women with postnatal depression seldom seek help from their physician or even more seldom are referred to psychiatric treatment makes it difficult to measure the incidence of this condition. Prospective studies of childbearing women before and after birth provide the best opportunities for investigation of incidence rate as well as symptomatology. However, the size of the samples and the methods used for detecting and defining postnatal depressions vary, as well as the time for the follow-up after delivery.

Pitt (2) reported in his pioneering study of postnatal depression an incidence rate of 11% within six weeks of delivery. His criteria were (a) subjects should describe subjective symptoms, (b) these symptoms should

[a] Institute of General Practice, University of Copenhagen.

have developed since delivery, (c) the symptoms should be unusual in their experience and to some extent disabling, (d) the symptoms should have persisted for more than two weeks.

When their babies were 1 year old, 28 of the 33 depressed women were followed up by a postal enquiry. Twelve women were at this time still depressed, i.e. just under 4% of the original sample and 43% of the postnatally depressed women. Pitt concluded that neurotic depression is a common and important complication of the puerperium. "Once diagnosed, it can be treated effectively by a combination of antidepressive drugs and simple psychotherapy, allowing the mother her distress and incompletely acknowledged hostilities. Untreated, however, it can persist for a year or more - as in 43% of the depressives in the first survey described above, or just under 4% of the total population studied. The implications for the mental health and happiness of the mother, her baby and indeed the whole family could be grave".

Pitt's incidence rate of about 11% for neurotic depression has been confirmed by many researchers. Most studies, however, find an even higher rate: Nilsson & Almgren (3) reported substantial neurotic reactions in 19% within two months after birth and further 26% with a moderate number of neurotic symptoms.

Uddenberg in his investigation (4) reported an incidence rate of 20% with severe mental disability where the emotional disturbance had resulted in a notable deterioration of social and interpersonal functioning in women four months after birth. Moderate mental disability was diagnosed in a further 27% of the women.

Similar results were obtained by Kumar & Robson (5) in their study of 114 childbearing women. They found that 14.9% were clinically depressed at three months postnatally. When the women were interviewed six months and one year after childbirth ten more women were found to be depressed. The overall prevalence for the first postnatal year was 23.7%. Paykel et al. (6) found a 22% prevalence of mild clinical depression in 120 women assessed at about six weeks post partum.

Playfair & Gowers (7) also found a high incidence: their study was carried out during 1972 and 1973 by 64 general practitioners in the United Kingdom. Of the 618 mothers, 24.3% had three or more symptoms of depression at or about three months after the birth, and 10% had six or more symptoms.

Oakley & Chamberlain (8) found in a sample of 55 primigravidae 24% depressions with symptoms and 33% with depressed mood. The women were interviewed 5 and 20 weeks after delivery.

In a representative sample of 103 women Cox et al. (9) found an incidence rate of 13% with severe postnatal depression and a further 16% with milder depression in women interviewed 3-4 months after birth.

Symptomatology

In his contribution on neurotic disorders in childbearing women, Kumar (10) cites Pitt's clinical account of depression, which in his opinion "encapsulates practically all the important features of postnatal depression"

It was mainly after return home that depression was almost always evident, chiefly as tearfulness, despondency, feelings of inadequacy and inability to cope - particularly with the baby. ('Every other woman seems to be blooming'.) Mood was often labile and any diurnal variation took the form of greater distress in the evenings. Guilt was mainly confined to self-reproach over not loving or caring enough for the baby. Suicidal ideas were present only in women admitted to psychiatric hospital, and feelings of actual hopelessness were not frequent. Yet many felt quite changed from their usual selves, and most had never been depressed like this before.

Depression was almost invariably accompanied and sometimes overshadowed, by anxiety over the baby. Such anxiety was not justified by the babies' health; none was seriously ill, and most were thriving. Feeding worries were the most common. Babies who would not sleep and kept crying were found hard to love, with subsequent guilt and anxiety. Overt hostility to the child, though, was rare. Two mothers had great difficulty in accepting their babies as really theirs. A few, while able to satisfy their babies' physical needs, feared spoiling them. Multiparae tended to worry over the older children's jealousy of the new arrival. Anxiety was also often manifest in hypochondriasis. Somatic symptoms abounded and formed the basis of fears of ill health ... Unusual irritability was common, sometimes adding to feelings of guilt. A few patients complained of impaired concentration and memory. Undue fatigue and ready exhaustion were frequent, so that mothers could barely deal with their babies, let alone look after the rest of the family and cope with the housework and shopping. Sometimes there was a loss of normal interests. Anorexia, occasionally associated with nausea was present with remarkable consistence. Sleep disturbances, over and above that inevitable with a new baby, was reported by a third of the patients, taking the form of getting off to sleep, and nightmares, more often than of early morning waking (2).

In Kumar & Robson's study (5), of 119 primiparae they found 15% of the women clinically depressed at three months postnatally. They had all or some of the following symptoms for at least a month, and their day-to-day activities were affected. The symptoms were fatigue, lack of energy, sleep disturbance, use of hypnotics, irritability, lack of concentration, depressed mood, weeping spells, symptoms of anxiety and depersonalisation. The women reported depressive thoughts, self-blame, low self-esteem, guilt, and pessimism.

In their study of postpartum depression Oakley & Chamberlain (8) reported four syndromes which were described under the heading of postnatal depression by the women themselves, their husbands, relatives and friends or by the medical staff involved.

1. Postnatal blues.

2. Anxiety states: a condition of anxiety about the baby and/or the responsibilities of motherhood. This was marked by an extreme sensitivity to the baby's behaviour, feelings of being on edge, inability to sleep soundly and inability to concentrate on other tasks on coming home. This state lasted up to two weeks. This was very common, experienced by 71% of the sample of 54 women.

3. Depressed mood. Feelings of depression which were intermittent after the first three weeks post partum without other symptoms. Feelings of intermittent depressed mood definitely had a later onset than the blues and the anxiety state and was experienced by 33% of the sample.

4. Depression. A depressed state occurring in the first five post partum months characterized by two or more of the following symptoms: open feelings of depression, feelings of tension or inability to relax, undue sensitivity to noise, panic attacks, fear or the avoidance of social contacts, low self-confidence, poor concentration, appetite or sleep disturbances, feelings of lethargy and irritability. This state of depression was described as a condition qualitatively different from the other three and was experienced by 24% of the childbearing women. The blues were clearly seen as a short-lived symptom for which specific factors were responsible as was the heightened anxiety on returning home.

In their prospective study of the psychiatric disorders of childbirth Cox et al. (9) interviewed childbearing women by Goldberg's standardized psychiatric interview on two occasions during pregnancy and twice more in the puerperium. The first postnatal interview took place within 10 days of delivery and the second postnatal interview was conducted at home, usually between three and five months after childbirth. They found that 13% had a depressive illness which fulfilled Pitt's (2) criteria, compared with only 4% during pregnancy. The depression impaired the womens' ability to carry out household tasks and caused much family distress. Most of these women felt difficulties coping with their baby, were excessively concerned about its health and doubted their ability to be good mothers. Further 16% had had milder depressions which had abated by the second interview but nonetheless lasted at least four weeks. The women were all quite definite in their description of having been depressed and anxious, but they reported no delusions, hallucinations, psychomotor retardation or serious suicidal thoughts. The authors underline that the deterioration in the marital relationship and the reduced libido suggest that postnatal depression is associated with considerable family vulnerability. Their finding that a postnatal depressive illness occurred in 13% of the sample and that a further 16% had depressive symptoms distinct from the blues of the first 10 days indicates that psychiatric morbidity is a common and disabling complication of the puerperium and that it is predominantly depressive in nature. Although these women were distressed and bewildered by their inability to cope they rarely reported their depressed mood to their general practitioner. The majority of the women tried to continue with their household tasks and to meet their husbands' as well as their babies' demands.

The symptoms described in the above-mentioned studies are confirmed by others (Kaij & Nilsson (11), Uddenberg (4), Playfair & Gowers (7)).

Obstetrical aspects

Generally, no associations have been found between pregnancy and birth complications and postnatal depression.

In their prospective survey of 119 primiparae Kumar & Robson (5) found that original doubts about going through with the pregnancy were related to postnatal depression three months after childbirth. However, no significant associations with individual obstetric experiences and postnatal depression were found.

In Paykel et al.'s study (6) of 120 women, the depressed women reported that they had found pregnancy subjectively stressful, but obstetric case records showed no greater objective evidence of pregnancy complications in this group. As for birth complications the records indicated fewer complications of labour in the depressed women, but the subjective view of labour was the same in both depressed and nondepressed women, thus indicating that the depressed women's experience of the delivery might have been more stressful. A history of previous miscarriage was one of five principal prognostic factors found by Playfair & Gowers (7) in their study of 618 mothers. No association was found in this study as well with complications during pregnancy or delivery, nor did they find associations with the condition of the baby.

Oakley & Chamberlain (8) found that depression during the five months following delivery was associated with feelings of not being in control during labour, and a general feeling of dissatisfaction about birth management. No association was found, however, with instrumental delivery. Cox et al. (9) also failed to find any obstetric characteristics of postnatal depression.

Even if studies of postnatal depressions have taken birth complications into account as a possible etiological factor, none have found objective evidence of associations either with pregnancy or birth complications. However, subjective experiences such as a history of earlier miscarriage (7), initial doubts about terminating pregnancy (5), a subjective experience of stressful pregnancy (6), subjective feelings of not being in control during labour and feelings of dissatisfaction about birth management (8) are associated with depression in the months after childbirth. This indicates that subjective experiences of stressful pregnancies and births rather than objective measures are of importance in relation to postnatal depressions.

Psychodynamic aspects

Many studies focus on the childbearing mothers' relationship to her own mother. There is considerable evidence that a disturbed mother-child relationship, especially in early childhood, complicates adaptation to motherhood (5, 12-16).

Bardon (17) states:

> ... I return to the suggestion that the most frequent and most severe stress contributing to depressive puerperal breakdown is the stress of facing all the very personal and private implications of becoming a mother ... I suggest that the most frequent and the most important stress factor is psychological and that it arises from unconscious conflicts in the woman about assuming the role and responsibilities of a mother ....
>
> Real or fantasized difficulties between a child and her parents will, when the child herself becomes a mother, be transferred into her relationship with her own child, making her anxious and doubtful about her competence as a mother. In depressive states a major component of the psychopathology - which is not necessarily the whole pathology - is excessive guilt and anxiety about aggressive feelings and fantasies entertained in early childhood about the mother. These by the process of

identification or projection can cause a mother to feel herself or her child as bad with possible rejection of the latter. The presence of such enduring unconscious conflicts predisposes a woman to severe stress when she becomes a mother.

In their study of postpartum mental disorder in an unselected sample of 861 women, Nilsson et al. (18) singled out two groups with increased risk of postpartum neurosis among women with apparently normal mental health before pregnancy: a group of women with current problems of which they were themselves usually aware, and a group which they labelled "latent neurotics". With regard to the latter group, they believed that the key conflict was the ambivalence between the "instinct of procreation and the rejection of the feminine role". The psychological complications of childbirth were influenced by the mothers' attitudes towards being a woman - her femininity. They distinguished between the social and the psychosexual gender role, where the latter is less influenced by social and cultural factors than by the individuals' personal infantile experience. An existing ambivalence in relation to motherhood is on the one hand reinforced by social convention, the families' - especially the husband's - expectations, and perhaps a wish for someone to possess and be dependent on oneself. On the other hand the rejection of motherhood is reinforced by the wish of the women to be economically productive, not only reproductive. If the unconscious rejection of motherhood is overcome sufficiently to permit a pregnancy, it might nevertheless operate strongly enough to result in various complications including postpartum neurotic reactions in relation to childbirth (11).

The influence of ambivalence on later postnatal depression is shown also in a study by Little et al. (19), who found that postnatal ratings of depression were associated with a high antenatal score on hostility. In their investigation their most useful predictive measure was "the hostility and direction of hostility questionnaire", which might be used at any time in pregnancy.

Discrepancy between expectations and reality is another factor in reactive depression. In her prospective study of women expecting their first child Marks (20) found that a month after the baby was born 48% were at least mildly depressed. She found no initial low self-esteem, but a marked association between depression and the way the woman saw her husband and child. The greater the gap between her ideals of them and the reality the greater was her later depression. She concludes that if our expectations are not fulfilled, depression may be a way of dealing with the disappointment.

The relationship between postnatal depression and previous psychiatric history is complex. Associations between previous psychiatric history and postnatal depression have generally been found in most investigations. Paykel et al. (6) showed that previous psychiatric history produced a strong independent effect both with and without recent stressful life events. Playfair & Gowers (7) found that a previous history of puerperal depression predisposed to another depression after childbirth even when the mother had been completely symptom free in between.

Associations between anxiety/depression in pregnancy and depression after childbirth have been found by some investigators and not by others. Playfair & Gowers (7) found that anxiety during pregnancy was an indicator of subsequent depression. Little et al. (19) also found that postnatal ratings of depression were associated with a high antenatal score on anxiety and

hostility. However, in their prospective study Cox et al. (9) found that antenatal anxiety was not predictive of postnatal depression. Indeed, postnatal depression occurred in several women who were almost symptom free during pregnancy. Oakley & Chamberlain (8) similarly found that depression after confinement was in fact slightly more probable in women who had reported no abnormal mental reactions during pregnancy. There was no relationship between postnatal blues, postnatal anxiety state or postnatal depression on the one hand, and reports of depressed mood or depression in pregnancy on the other, but there was a relationship between depressed mood in pregnancy and depressed mood afterwards. Kumar & Robson (5) did not find a link either between antenatal and postnatal depression. They suggest that this might reflect the therapeutic value of participation in a prospective survey, i.e. some women might have solved their emotional difficulties during pregnancy which might otherwise have persisted in the postnatal period. In Kumar & Robson's study new cases of depression developed after delivery. This was also the case in Uddenberg's study (14).

Associations between severe postnatal blues and later postnatal depression have been found in several studies (6-9).

Family aspects

Marital relationship

Marital difficulties have been found associated with postpartum depression by several authors (6,7,8,10) as have prior psychiatric problems in the husband (10). In one study (6) the women were asked to which degree they could usually tell their husbands about worries and problems, or found the need to keep certain things from them, and the extent to which the husband would listen to them or avoid them. The adequacy of communication in the marital relationship was found significantly worse in depressed women. They also had more adverse scores on a rating made of the degree to which husbands helped with household chores, shopping and other children, since the birth of the baby. However, poor marital relationship, poor communication with the husband, and absence of help from the husband since the birth showed an effect only in those women who had also experienced an undesirable life event. The marital relationship thus appeared to be a vulnerability factor in relation to additional stressful events.

In a small study of women having their first baby (20) Marks found a marked association between depression and the way the woman saw her husband and child. The greater the gap between her ideal of them and the reality, the greater was her later depression. As she became depressed the gap widened even further, but the fact that it was present before the onset of the depression suggests that it may be causal rather than merely a symptom of the depression.

In Playfair & Gowers's study (7) on depression following childbirth the interview about three months after the birth showed that external stress unrelated to confinement was the most important predictive factor besides depression during pregnancy, severe attack of the five-day blues, a history of previous puerperal depression and previous miscarriage. Certain types of stress appeared to be more specifically associated with depression than others: personal difficulties with the husband and in-laws, physical ill health of the mother, and housing problems were especially prominent.

Difficulties with the partner were caused either by his enforced absence because of his job or by problems in the personal relationship. The authors state that as predictive factors marital disharmony may be detected or housing problems foreseen during pregnancy. Some mothers might externalize a more fundamental inner stress or inadequacy when reporting external stress where a more stable person suffering the same conditions would not have mentioned them. But the prognostic value of the observation remains whether the mother was reporting a genuine causal agent or was merely indicating that she perceived her circumstances as stressful.

Mother-child relationship

Very few studies comment on the depressed mothers' relation to the infant, even if anxiety over the baby and feelings of inadequacy and inability to cope with it are important features of postnatal depression. It is tempting to assume, however, that the depressed mother has difficulties in responding to the signals and needs of the baby in an adapted and flexible way. Ambivalence to motherhood and subsequent guilt feelings would add to these difficulties.

In the studies cited in this review few comments are found regarding the mother-child interaction.

In her study of mothers with their first baby Marks (20) found that the greater the depression, the greater the stimulation of the child. The way the depressed mothers responded was, however, less related to the babies' demands than was the response of the nondepressed mothers.

In a study of maternal affection after childbirth Robson & Kumar (21) found that three months after birth clinically depressed mothers were significantly more likely to express mixed feelings or indifference and dislike for their babies. In an experimental study of mother-child interaction in depressed and nondepressed mothers three months after birth it could be shown that while the nondepressed mothers' babies reacted with frustration when their mothers did not respond or talk to them, the babies with depressed mothers did not react to the mothers' passivity (22).

Further research is needed to describe these patterns in interaction between depressed mothers and their children and to elucidate possible long-term consequences for the child's development.

Biological aspects

In his review on neurotic disorders in childbearing women Kumar (10) states that studies of disorders of neuro-endocrine or neuro-transmitter systems in postpartum depression are either negative or are unrelated to the depressive disorder.

Alder & Cox (23) made a follow-up study on breastfeeding and use of oral contraceptive pills in depressed and nondepressed women. The study showed some relationship between depression and breastfeeding success. At the interview three to five months after delivery nearly twice as many of those totally breastfeeding had symptoms of depression compared with those partially breast-feeding. There was no other relationship between feeding pattern and social class or other social obstetric or psychiatric variables. Also mothers

taking the pill were more likely to be depressed than those not on the pill; 45% of the totally breastfeeding women had depressive symptoms compared with none of the partially breastfeeding women and more had had severe postnatal depressive symptoms.

Taking the pill or fully breastfeeding thus appeared to increase the chances of being depressed up to 3-5 months post partum. The mothers who were least likely to be depressed were those who were most likely to have normal levels of endogenous hormones, i.e. the non-pill-taking partial breastfeeders.

Social and environmental aspects

In their study on the social origins of depression Brown & Harris (24) tried to clarify the part played by social and environmental factors in the etiology of depressive disorders. Women who became depressed were more likely to have experienced severe life events in the recent past. Certain factors enhanced the womens' vulnerability to life events, either in isolation or in combination: the prototypical woman at risk was from the working-class, had young children at home and therefore was not employed, had a poor relationship to her spouse and had lost her mother before she was 11 years of age. This study was not aimed at childbearing women.

Most studies have found that the incidence of postnatal depression does not seem to be influenced by socio-economic status (2,3,5,6,9,14).

However, recent stressful life events, housing problems and current social problems have been found to be significantly associated with "mild clinical depression" (6), "depressed mood" (8) and "three or more symptoms of depression" (7).

In a study by Turner & Noh (25) 312 women were interviewed 2-4 weeks after giving birth. The goal of the study was to contribute to an understanding of the relationship between social class and psychological distress. The study focused on social support and personal control as explanatory variables. They did find the typical relationship between social class and psychological distress. They also found that differences in life stress only partially accounted for this association and that there appeared to be greater responsiveness or vulnerability to stress with the lower class status.

Multiple regression analysis indicated that social support and personal control were important contributors to the social class/psychological distress relationship. Analysis of interaction effects showed that both social support and personal control were of significance at cross-class levels. When both social support and personal control were high these two variables were entirely adequate to explain the class/distress relationship. Neither high social support nor high personal control, however, were in the absence of the other clearly adequate to explain the relationships. This study concluded that variations in social support and personal control were responsible for an important portion of the class/distress relationship. However, the role and importance was both conditional and complex, varying across both class grouping and stress level. The authors believe that other factors exist that influence class differences in vulnerability to stress, factors that were of little or no consequence when the experience of both social support and personal control were high.

Interactive factors

By using multiple regression analysis, based on depressed versus nondepressed women, Paykel et al. (6) found that undesirable life events showed the greatest effects. This was followed in descending order by age, previous history of psychiatric disorder, postpartum blues and marital problems (Table 1).

Table 1. Multiple regression analysis based on depressed versus non-depressed

Independent variable	Simple multiple regression correlation[a]	Standardized regression coefficient	F value for coefficient[a]
Undesirable life events	.37	.27	10.66
Age	-.27	-.25	9.97
Previous history of psychiatric disorder	.38	.25	8.09
Postpartum blues	.27	.23	8.15
Marital problems	.38	.22	6.47

[a] All significant at p .01 or better.

Source: Paykel et al. (6).

Oakley & Chamberlain (8) tested the effect of social factors on vulnerability and depression by tabulating the four following factors against mental health outcome: housing problems, little or no previous contact with babies, segregated marital roles and not being employed. Table 2 shows the incidence of depression and depressed mood in relation to the four vulnerability factors. Twenty per cent of women with one vulnerability factor became depressed, 53%, 70%, and 100% with two, three and four factors respectively became depressed.

By means of a multiple regression analysis Playfair & Gowers (7) identified five principal prognostic factors: a history of previous miscarriage, the presence of six or more symptoms of depression during the pregnancy, severe attack of postnatal blues and, following birth, external stress, in particular marital difficulties, housing problems and physical ill health of the mother.

Prevention and intervention

In a congress on psychosomatic medicine in obstetrics and gynaecology in London 1971 Pitt stated "... that in the routine postnatal examination the patient's state of mind should be ascertained, as well as the condition of her reproductive tract" (26). In the years to follow many studies took place trying to elucidate emotional disturbances connected with childbirth. In their studies on paranatal emotional adjustment and reproductive adaptation in

Table 2. Depression plus depressed mood and social vulnerability factors

Vulnerability factors[a]	Depressed or with depressed mood		Not depressed	
	No.	%	No.	%
Four factors	4	100	0	0
Three factors	7	70	3	30
Two factors	11	53	10	47
One factor	4	20	16	80

[a] Not employed, segregated marital roles, housing problems, little or no previous contact with babies.

Note: Significant at p 0.01.

Source: Oakley & Chamberlain (8).

mother and daughter, Nilsson & Almgren (3) and Uddenberg (14) contributed to the growing acknowledgement of the need to develop preventive or early interventive procedures.

The researchers mentioned in this review suggest various ways to view the issue. Oakly & Chamberlain (8) conclude that "mother responses to the medical management of birth and social dimensions of births as a life event are important considerations for all concerned with the care of childbearing women. More antenatal and postnatal attention should be given to these problems in an attempt to alleviate the difficulties many women experience". Playfair & Gowers (7) state "... there is already close surveillance of the mother during the pregnancy and labour, and the presence of abnormal physical findings usually leads to additional or extraordinary care. The present study shows that being aware of the psychiatric problems which may affect a mother is equally important, and that there are simple indicators to the onset of these problems". The psychiatrists Cox, Connar & Kendell (9) state "... nevertheless, even if psychiatrists are unlikely to be involved directly in treating most postnatal depressions, their task in teaching midwives, health visitors and general practitioners is important. At present the training of these groups is inadequate and is also hindered by the total neglect of postnatal depression in some standard midwifery text books". Marks (20) proposes home visits during pregnancy to assess the needs of the mother-to-be and her spouse and to discuss their expectations and the possibilities open to them. She proposes the establishment of groups for couples to share their fears and joys. One publication by Handford (27) describes a treatment model that has been developed to help women with postpartum depression. The model is based on the guiding principle that women

themselves are the experts on postpartum depression. They found that the model, which is most useful to the postpartum depressed women, is one which involves talking in confidence to other women who have experienced the same difficulties. Three essential parts of the model are described.

1. Assessment: the woman contacts the service by phone.

2. Telephone counsellor: the depressed mother is assigned to a telephone counsellor who herself has experienced a postpartum depression, has been through the programme and has recovered. This counsellor provides the depressed woman with a constant source of support.

3. Support group: the third part of the model involves a weekly support group which is ongoing and open-ended. An experienced group leader who herself understands postpartum depression shares her own experience with the group while encouraging the women to talk about what is happening to them.

This model has been developed over 12 years and has involved the professional/self-help programme offered by the British Columbia Ministry of Human Resources as one of its services to families.

Conclusion

Postpartum neurotic depression is a common and disabling condition. Some 15-20% of childbearing women experience mood disturbances for shorter or longer periods in the months after childbirth and about 5% still feel depressed about a year after the child was born.

Virtually nothing is known of the consequences for the family, yet marital problems seem to be an associated factor in many cases. The consequences for the mother-child relationship are also fairly unknown. Yet, problems with adapting to motherhood, feelings of inadequacy, mixed feelings towards the baby, and anxiety and self-reproach over not loving and caring enough for the baby are common features.

The following correlates have been found.

- Psychodynamic aspects: disturbed relationships with parents in early childhood, profound ambivalence towards childbearing and previous psychiatric history have been found influential. Associations between anxiety/depression in pregnancy and postnatal depression are found in some studies - and not in others. Severe postpartum blues, however, are consistently found associated to later depression.

- Family aspects: marital conflicts, no help from the husband, and difficulties in communication have been correlated with postnatal depression.

- Stressful life events and housing problems are associated with depression after childbirth. Social support and personal control are protecting factors.

- Subjective experiences of a stressful pregnancy and dissatisfaction with delivery management has been found associated with postnatal depression, whereas objective complications of pregnancy or birth are not.

The studies reviewed underline the importance of:

- educating health personnel in the emotional aspects of childbearing;
- establishing groups for parents before and after childbirth where the couples can share problems and joys, and find social support;
- therapeutic facilities for depressed mothers to talk about and recognize ambivalence, guilt feelings, anxiety, etc.

Research on the consequences for the mother's future mental health, for the mother-child relationship, for the development of the child and for the marital relationship is needed.

REFERENCES

1. Brockington, I.F. & Kumar, R. ed. Motherhood and mental illness. London, Academic Press, 1982.
2. Pitt, B. "Atypical" depression following childbirth. British journal of psychiatry, 114: 1325-1335 (1968).
3. Nilsson, A. & Almgren, P.e. Paranatal emotional adjustment. A prospective investigation of 165 women. Acta Psychiatrica Scandinavia, Suppl.220: 65-141 (1970).
4. Uddenberg, N. & Nilsson, L. The longitudinal course of paranatal emotional disturbance. Acta Psychiatrica Scandinavia, 52: 160-169 (1975).
5. Kumar, R. & Robson, K. Neurotic disturbance during pregnancy and the puerperium: preliminary report of a prospective study of 119 primiparae. In: Sander, M. ed. Mental illness in pregnancy and the puerperium. London, Oxford University Press, 1978, pp. 40-51.
6. Paykel, E.S. et al. Life events and social support in puerperal depression. British journal of psychiatry, 136: 339-346 (1980).
7. Playfair, H.R. & Gowers, J.I. Depression following childbirth - a search for predictive signs. Journal of the Royal College of General Practitioners, 31: 201-208 (1981).
8. Oakley, A. & Chamberlain, G. Medical and social Factors in postpartum depression. Journal of obstretrics and gynaecology 1: 182-187 (1981).
9. Cox, J.L. et al. Prospective study of the psychiatric disorders of childbirth. British journal of psychiatry, 140: 111-117 (1982).
10. Kumar, R. Neurotic disorders in childbearing women. In: Brockington, L.F. & Kumar, R. ed. Motherhood and mental illness. London, Academic Press, 1982, pp. 71-119.
11. Kaij, L. & Nielsson, A. Emotional and psychotic illness following childbirth. In: Howells, J.G. ed. Modern perspectives in psycho-obstetrics. Edinburgh, Oliver & Boyd, 1972, pp. 364-83.
12. Frommer, E.A. & O'Shea, G. The importance of childhood experience in relation to marriage and family building. British journal of psychiatry, 123: 157-160 (1973).
13. Shereshefsky, P.M. & Yarrow, L.J. Psychological aspects of a first pregnancy and early postnatal adaptation. Raven Press, New York, 1975.
14. Uddenberg, N. Reproductive adaptation in mother and daughter. Acta Psychiatrica Scandinavia, Suppl.254 (1974).
15. Breen, D. The birth of the first child. London, Tavistock, 1975.
16. Wolkind, S. & Zajicek, C.E. Adult psychiatric and childhood experiences. British journal of psychiatry, 143: 188-191 (1983).

17. Bardon, D. Puerperal depression. Psychosomatic medicine in obstetrics and gynaecology. 3rd International Congress, London 1971. Basle, Karger, 1972, pp. 335-339.
18. Nilsson, A. et al. Postpartum mental disorder in an unselected sample. The psychiatric history. Journal of psychosomatic research, 10: 327-339 (1967).
19. Little, B.C. et al. Psychosocial antenatal Predictors of Postnatal Depressed Mood. Journal of psychosomatic research, 26: 419-428 (1982).
20. Marks, J. Maternal depression - who is at risk? Health visitor, 53: 7-9 (1980).
21. Robson, K.M. & Kumar, R. Delayed onset of maternal affection after childbirth. British journal of psychiatry, 136: 347-53 (1980).
22. Field, T. Infants of postpartum depressed mothers. In: Proceedings of the Second World Congress of Infant Psychiatry. 19 (1983).
23. Alder, E.M. & Cox, J.L. Breastfeeding and post-natal depression. Journal of psychosomatic research, 27(2): 139-134 (1983).
24. Brown, G.W. & Harris, T. Social origins of depression. London, Tavistock, 1978.
25. Turner, R.J. & Noh, S. Class and psychological vulnerability among women: the significance of social support and personal control. Journal of health and social behaviour, 24: 2-15 (1983).
26. Pitt, B. Neurotic (or atypical) depression following childbirth. Psychosomatic medicine in obstretrics and gynaecology. 3rd International Congress, London 1971. Basle, Karger, 1972, pp. 347-349.
27. Handford, P. Postpartum depression: what is it, what helps? The Canadian nurse, Jan: 30-33 (1985).

DEPRESSED MOOD IN THE WEEK FOLLOWING CHILDBIRTH

An investigation of 2586 Danish women

by Dr Lene Lier[a], Susanne Houd[b], Henrik Bronnum-Hansen[b], Dr Finn Kamper Jorgensen[b] and Dr Flemming Warborg Larsen[c]

Introduction

In 1984 the Danish Institute of Clinical Epidemiology undertook a nationwide consumer survey of women's experiences, wishes and opinions with regard to pregnancy, birth and choice of place of birth (1). On the initiative of the Danish Ministry of Interior and the National Board of Health, the survey was carried out to assist counties in the planning of the perinatal services in 1985. It consisted of three sections:

(1) a poll comprising 611 women aged 16-49 years, picked representatively for all of Denmark: 79% participated;

(2) a "pregnancy study" in May/June 1984 comprising approximately 3800 women who were 4 1/2 months pregnant: 46% answered an extensive questionnaire that had been given to the women at their first consultation with a midwife;

(3) a postnatal study, 3 months after delivery, comprising 3880 women who had given birth in May 1984: 81% answered an extensive questionnaire.

Results from the postnatal study showed that 29% of the women indicated that they had felt depressed/sad in the postnatal period. The postnatal period was defined as "the first week after birth in a hospital or in a clinic". Outpatient deliveries and home deliveries were not included in this study.

The figure of 29% was surprising as the incidence of postpartum blues is normally considerably higher - more than 50% (2) - whereas the incidence of neurotic depressions in the months after delivery is somewhat lower, 15-20% (3). However, the questionnaires were answered about three months after delivery and may not reflect the women's postnatal mood precisely. Some may have forgotten slight, transient mood disturbances, others may be influenced by later anxiety and depression looking back at their mood in the first week post partum.

In spite of the expected and unavoidable biases inherent in the material, we have tried to identify possible indicators predicting feelings of sadness/depression in the first week post partum.

It is known that severe postpartum blues is associated with later neurotic depression (4,5). Very few women, however, seek professional help for this disabling emotional condition (4,5). Several women still feel depressed one year after childbirth (5,6,7). Moreover, research into depressed mothers' interaction with their infants has shed light on these mothers' difficulties in childrearing and the negative influence on the social development of their infants (6).

[a] Institute of General Practice, University of Copenhagen.
[b] Danish Institute of Clinical Epidemiology.
[c] Department of Child Psychiatry, University Hospital of Copenhagen.

Identification of associations between concrete and experienced complications during pregnancy, delivery and the first week post partum, on the one hand, and postnatal depression, on the other, might point out stress factors and preventive possibilities in the caring system for pregnant and birthgiving women. Measures to cope with these risks might be of benefit to the mother and also alleviate the stress on the whole family.

Material

The DIKE postnatal study comprised 3880 randomly selected women who gave birth to a child in May 1984 and were asked to answer a comprehensive questionnaire that was mailed to them three months after delivery. Of those women, 81% returned the questionnaire. Among other questions the women were asked about whether or not they felt depressed during the first week post partum: 845 women or 29% answered yes to this question, and 2307 answered no. However, the question was only to be answered by women who gave birth to a child in hospital or clinic: 22 women were therefore excluded and the total number of women stating depressed mood was 843 (Fig. 1).

Fig. 1 The DIKE postnatal survey

Population group		3880 women
Questionnaire returned from 81%		3152 women
Depresssed mood stated by 29%		845 women
Home deliveries	1	
Outpatient deliveries	18	
Place of birth not stated	3	
Depressed mood not stated by and included in survey		823 women

Method

First, a bivariate analysis was performd. The relationship between the dependent variable (depressed mood post partum) and one of all other variables in the questionnaires were estimated. The most significant correlations were identified between depressed mood post partum and socioeconomic conditions, the course of pregnancy, the course of birth, the first week post partum and the condition of the newborn child (Table 1).

A multivariate analysis was then carried out. For this analysis only those variables that were most significant according to the bivariate analysis were selected. The number of variables in the multivariate analysis was further limited based on the following criteria. Firstly, one of several variables which described analogue relations was chosen, e.g. the variable "well/ill during pregnancy" was chosen instead of the variable "admitted one day during pregnancy". It was assumed that the latter variable would be included by the former. Secondly, variables concerning each of four main themes (pregnancy, birth, puerperium, the newborn child) were chosen which partly illustrated objective events, i.e. birth complications, and partly the

Table 1. Bivariate analysis with depressed mood/sadness as dependent variable

	Independent variables	Relative risk
	Parity: primiparae/multiparae	1.6
*	Age: <20 years/≥20 years	1.6
	Civil status: unmarried/married	1.3
□	School education: <9 years/≥9 years	1.3
□	Employed: no/yes	1.2
□	Student: no/yes	1.4
*	Economic problems: yes/no	1.5
	Pregnancy:	
□	Tried to become pregnant: >25 months/<25 months	1.3
□	Earlier provoked abortion: yes/no	1.3
□	Expected risk for birth: yes/no	1.3
□	Admitted to hospital during pregnancy: yes/no	1.4
	Well during pregnancy: no/yes	1.5
	Need to care for herself exceeding the need of other pregnant women: yes/no	1.5
	Delivery:	
	Birth complications: yes/no	1.4
	Caesarian sectio: yes/no	1.4
	"Delivered the child herself": no/yes	1.5
	"Felt in good hands": no/yes	1.6
	"Felt secure": no/yes	1.6
	Birth experience good: no/yes	1.7
	Puerperium:	
	Staff too busy: yes/no	2.2
	Experience with staff good: no/yes	2.2
	Too little help with breastfeeding: yes/no	2.1
	The child:	
	Child healthy: no/yes	1.8
	Child admitted to pediatric department: yes/no	1.8
	Child given medical treatment: yes/no	1.7

□ Variables with RR <1.5 are excluded from the multivariate analysis except birth complications and Caesarian sectio.

* Excluded because of too few women in one of the groups.

womens' subjective experience, e.g. "have mixed/negative feelings when thinking of the birth". Thirdly, other variables with otherwise significant relative risk factors were excluded because the number of women in these groups was too small.

The statistical analysis was accomplished by a logistic regression model with depressed mood as the dependent variable. The following dichotomous variables were considered independent variables: parity, ill in pregnancy, sectio, birth complications and child admitted to neonatal care. These variables refer to events which could be confirmed by the records. The following variables refer to the subjective experiences of the women: increased need of rest in pregnancy compared to other pregnant women, the newborn's condition, insecurity during birth, did not feel in good hands during birth, does not want the same kind of birth again, no support with breastfeeding, and staff too busy.[a]

Results

Of the above-mentioned factors only parity, increased need of rest in pregnancy, birth experience, no support with breastfeeding, too busy staff, and child admitted to neonatal care contributed significantly (on a 5% level) to the development of depressed mood (Table 2). First-order interaction was significant only between increased need of rest in pregnancy and too busy staff. Considering the significant variables, 566 observations from the original 3152 had at least one missing value and have been excluded.

Of these 566 observations, 284 did not miss the value of depressed mood post partum: 37% of the 284 women indicated that they had felt depressed. For the 2586 observations included in the model the corresponding figure is 29%. This difference is significant (p.0.01). No further studies on the differences between the 2586 included and the 566 nonincluded women have been made.

Table 2 shows the individual Odd's ratios contributed multiplicatively. For example, Odd's ratio for primi/multiparae is 1.72. As another example, Odd's ratio is 1.72 x 2.05 = 3.5 for two women, who only differ - with respect to the significant variables - in the one woman being primipara with a child admitted to a paediatric department and the other woman being multipara with a child not admitted to a paediatric department.

With respect to the variables increased need of rest in pregnancy and too busy staff, however, the total effect was not multiplicative as these variables together contributed with 1.76.

[a] Details of the analysis may be ordered from the Danish Institute of Clinical Epidemiology (DIKE), Svanemollevej 25, DK 2100, Copenhagen O.

Table 2. Factors significantly associated with depressed mood

	Odds ratio	95% confidence intervals
Parity	1.72	1.44 - 2.07
Increased need of rest in pregnancy	1.59	1.28 - 1.98
Staff too busy	2.24	1.68 - 3.01
Together	1.76	1.58 - 1.96
Negative birth experience	1.72	1.43 - 2.06
Child admitted to neonatal care	2.05	1.52 - 2.76
No support with breastfeeding	1.43	1.08 - 1.89

Tables 3 to 7 illustrate the interactive effects shown in Table 2.

Table 3 shows the association between depressed mood on the one hand and parity, increased need of rest in pregnancy compared to other pregnant women and too busy staff in the week post partum on the other hand. The results show an overall increased frequency of depressed mood in primiparae, with one exception. In cases with both variables present the frequency of depressed mood was the same regardless of parity. With two factors present the association with depressed mood was increased only among multiparae. Surprisingly, "too busy staff" did not increase the risk further among primiparae who had felt an increased need of rest in pregnancy.

Table 4 shows the association between depressed mood on the one hand and parity and birth experience on the other.

As a whole, primiparae more often than multiparae felt delivery stressful. Moreover, the association between a stressful birth experience and depressed mood was strongest among primiparae.

Table 5 shows the association between depressed mood on the one hand and parity and a need for support with breastgiving on the other. Again, the association was strongest concerning primiparae. The increased frequency of depressed mood in multiparae who felt that they got insufficient help with breastfeeding is noteoworthy.

Table 6 shows the association between depressed mood on the one hand and parity and child admitted to neonatal care on the other. A total of 213 babies, or 8.2% of the children in the study, were admitted to neonatal care during the first week after birth. Among mothers to babies admitted to neonatal care 51% primiparae and 47% multiparae reported that they felt depressed in the first week post partum.

Table 7 shows that we have no information about which treatment was given to the infants admitted to a paediatric department. However, we do know the bivariate associations between kind of treatment and depressed mood. This table shows a strong association between treatment and depressed mood, and this association increases markedly when treatment is intensified. While, for example, the use of a heated cot only moderately increases the rate of depression (31%), incubator plus phototherapy for icterus has a strong effect (60%).

Table 3. Women grouped according to the criteria: parity, increased need of rest in pregnancy, staff too busy and depressed mood

Parity	Increased need of rest in pregnancy	Staff too busy	Not depressed	Depressed	Depressed/ Not depressed
Multi-parae	No	No	728	161	0.22
		Yes	63	35	0.56
	Yes	No	247	91	0.37
		Yes	33	25	0.76
Primi-parae	No	No	560	232	0.41
		Yes	76	87	1.14
	Yes	No	117	93	0.79
		Yes	22	16	0.73
Total			1846	740	0.40

Table 4. Women grouped according to the criteria: parity, birth experience and depressed mood

Parity	Birth experience	Not depressed	Depressed	Depressed/ Not depressed
Multiparae	Good birth	782	176	0.23
	Mixed feelings or doesn't want the same kind of birth	289	136	0.47
Primiparae	Good birth	473	193	0.41
	Mixed feelings or doesn't want the same kind of birth again	302	235	0.78
Total		1846	740	0.40

Table 5. Women grouped according to the criteria: parity, support with breast-feeding and depressed mood

Parity	Support with breast-feeding	Not depressed	Depressed	Depressed/ Not depressed
Multiparae	Yes	995	270	0.27
	No	76	42	0.55
Primiparae	Yes	684	334	0.49
	No	91	94	1.03
Total		1846	740	0.40

Table 6. Women grouped according to the criteria: parity, support with breast-feeding and depressed mood

Parity	Child admitted to neonatal care	Not depressed	Depressed	Depressed/ Not depressed
Multiparae	No	1016	263	0.26
	Yes	55	49	0.89
Primiparae	No	722	372	0.52
	Yes	53	56	1.06
Total		1846	740	0.40

Table 7. Child given medical treatment

	Not depressed (%)	Depressed mood (%)
No treatment	74	26
Heated cot	72	28
Phototherapy	64	36
Incubator	57	43
Unspecified treatment	50	50
Heated cot + phototherapy	47	53
Incubator + phototherapy	40	60

Discussion

Of 3152 randomly selected women answering a questionnaire 3 months after delivery 29% indicated that they felt depressed/sad in the first week after delivery in a hospital or in a clinic.

This figure is markedly lower than the incidence of postpartum blues found in many other studies where more than 50% of the women experienced the blues symptoms (2,8,9,10). The postnatal interviews/questionnaires used in these studies took place within the first weeks of delivery. Generally the women did not regard themselves as ill or depressed, as the episodes of weeping and dysphoria during the first week post partum were transient. Among the most severe cases of postpartum blues, however, there was an association with depression in the following months. Studies on neurotic depression following childbirth (i.e. nonpsychotic depression) have shown incidences of 15-20% (3,11). Obviously this is markedly less than the 29% found in our survey.

We tried to elucidate this question by reading 75 questionnaires, as many women had written comments on their experiences. Because of the retrospective nature and design of the questionnaire it was not possible to obtain systematic, valid information from these written comments.

The majority of studies dealing with postpartum mood disturbances are based on small samples using in-depth interviews. The present study is based on a nationwide, representative sample. The strength of the study lies partly on this fact and partly on the size of the sample.

Why, then, do only/as many as 29% answer yes to a question "depressed/sad" in the first week post partum? There may be several reasons for this. Firstly, a number of women might have forgotten slight and transient mood disturbances and did not regard these symptoms as "depressed/sad". Secondly, it could be that only the women experiencing more severe postpartum blues would remember it three months after delivery. Thirdly, women who experience an emotional crisis in connection with separation from the newborn baby because of illness would certainly remember their emotional reactions. Fourthly, women who became depressed within the months after delivery might remember the first week post partum as emotionally stressful.

Whatever the reasons, the statistical analysis of the material provides knowledge of associations with experienced depressed mood in the first week post partum which might serve as indicators for preventive needs in birthgiving women.

A surprising result was that subjective experiences of pregnancy and birth and not objective complications showed significant associations with depressed mood post partum: time to listen to pregnant and birthgiving women's thoughts, anxieties and complaints, and competency to support the women emotionally thus are necessary tools if preventive measures are to be taken. A well educated and sufficient staff is necessary.

Pregnancy

Complications and illness in relation to pregnancy were unrelated to depressed mood/sadness within the first week post partum. This is in agreement with several studies of maternity blues and postnatal depressions (4,8,10,12,13,14). As for pregnancy, however, an experienced need to rest,

exceeding the need of other pregnant women, were significantly associated with depressed mood/sadness post partum.

An increased need of rest unrelated to objective complications might reflect increased anxiety and/or experienced psychosomatic problems. This might be in accordance with the study of Paykel et al. (15), where the depressed women reported that they found pregnancy subjectively stressful although there was no greater objective evidence of pregnancy complications in this group. Also, increased psychosomatic symptoms in pregnancy were found associated with mental handicap postnatally in the study by Uddenberg (6). This study also found associations between ambivalence to pregnancy, psychosomatic complaints and mental handicap following childbirth.

Unfortunately, our questionnaire gives no information regarding psychosomatic symptoms in pregnancy or ambivalence to pregnancy. Nevertheless, an increased subjective need to rest and to care for herself regardless of the objective reasons is an indicator pointing out a need for increased attention/psychoprophylactic care by the antenatal professional staff.

Delivery

The same associations were found with respect to the course of delivery: unrelated to objective complications of labour, the subjective experience of a stressful delivery was significantly associated with depressed mood/sadness within the first week post partum. This is in accordance with studies by Paykel et al. (15) and Oakley & Chamberlain (9), who found similar associations between experienced stress/dissatisfaction during delivery and depression in the months after childbirth, whereas no association was found with obstetrical complications. Other studies (Kumar & Robson (7), Playfair et al. (16) and Cox et al. (4) failed to find any association between postnatal depression and obstetrical complications. Again, the importance of a subjectively stressful birth experience, regardless of objective complications, emphasizes these women's need for professional attention.

The postpartum week

The relationship between depressed mood/sadness in the postpartum week and a need for attention/support from the nurses was evident in the associations between "staff too busy" and "too little help with breastfeeding" on the one hand and depressed mood/sadness on the other.

Obviously an experience of a too busy staff represents the most influential indicator concerning depressed mood within the first week post partum.

It is well documented in numerous studies that women in the puerperium are in a state of emotional vulnerability (2,10). The birth of a first child, especially, constitutes an existential change in life where - at least for a period - the woman must give up a great deal of personal freedom to care for the infant. This may provoke an emotional crisis (17). A merging of strong experiences during delivery, the early relationship with the newborn baby, the anxiety and tension connected with the responsibility for child care, physical exhaustion following delivery, breastfeeding and a lack of sleep, etc. constitute an overwhelming emotional strain. Most women experience increased need of attention and support to cope with this multitude of impressions in order to adapt to motherhood.

The isolation of the childbearing woman from her extended family is new in human history. In most cultures birthgiving has been a period where the woman in confinement was surrounded and supported by familiar women, all of whom respected traditions and rituals that reflected the cultural pattern of the postpartum period.

While modern obstetrical care provides an optimal physical safety for mother and baby, the psychological needs of the mother have not been met equally well. The strong association between depressed mood/sadness and an experience of a too busy staff emphasizes the importance of a sufficient and well educated staff who is able not only to teach the mother the practical abilities of breastfeeding and child care, but also is able to meet the emotional needs of women.

The complexity of the woman's need for help in the days following delivery for practical as well as for emotional reasons is well illustrated by the following results.

Even if primiparae overall are most vulnerable to a too busy staff as well as to insufficient help with breastfeeding the analysis shows that multiparae may also need support. Concerning breastfeeding quite a number of multiparae with depressed mood felt that they needed more help. One might assume that multiparous women were able to breastfeed without much help thanks to earlier experience. However, some might have experienced failure and incompetency when trying to breastfeed their first child. Their insecurity and anxiousness when trying to breastfeed the next baby may be even more evident than in first-time mothers.

An experienced stressful pregnancy is another factor which increases the vulnerability among multiparae to a too busy staff after delivery. Among women with increased need of rest in pregnancy the frequency of depressed mood was the same for multiparae as for primiparae. This might reflect that the need of support from the staff is the same regardless of parity. Surprisingly, the primiparae who felt an increased need to rest and to care for themselves during pregnancy and who felt that the staff was too busy post partum did not report depressed mood in the week after delivery as frequently as one would expect. This might be in accordance with the results by Uddenberg & Nilsson (18), who in a study of 101 primiparae found a relationship between rejection of problems during pregnancy and postnatal mental handicap. If this is the case in the present study, it might explain the high figure of 1.14 found in the group of primiparae who did not need to rest during pregnancy but felt that they got insufficient help and support from the staff after delivery.

Admission of the child to a paediatric department

A strong association was found in the multifactorial analysis between depressed mood in the first week post partum and admission of the newborn child to a paediatric department. Furthermore, the bivariate analysis showed an increased rate of depressed mood with increased intensity of treatment of the baby. Two factors strongly influencing the mood of birthgiving women should thus be considered. Firstly, the separation of mother and child following admission of the baby to neonatal care or observation and, secondly, the mother's anxiousness for the health of the baby.

BEST COPY AVAILABLE

Separation from the newborn baby for reasons of observation or treatment is a well known threat to the early mother/baby relationship. Anxiety and feelings of guilt and failure are found to be very easily evoked emotions in a mother, especially in the period immediately after delivery (19).

Delivery terminates the biological symbiosis between mother and fetus present in pregnancy. Psychologically, however, an emotional symbiosis exists after the birth within the mother/baby dyad, eliciting a highly sensitive alertness in the mother to the signals and needs of her baby. Within the first week after childbirth the mother will normally learn to know her baby's needs, and she will experience increased competency and self-esteem as a mother. Giving birth to a sick or premature baby with a need of admission to a paediatric department is a severe strain.

The early separation causes a violation of the normal experience of emotional symbiosis, the mother feels alien to her infant and incapable of satisfying its needs and caring for it. During the separation the mother usually feels intensely anxious for the health of the baby, imagining the worst possible outcome. She feels guilty, not being able to give birth to a healthy baby. The lowering of the mother's self-esteem coupled with the emotional consequences of the early separation of the mother/child dyad (guilt, anxiety, and alienation) jeopardizes the establishment of the early mother/child relationship (14).

Thus, the association found in this study between the baby's admission to neonatal care and medical treatment on the one hand and depressed mood/sadness in the postpartum week on the other hand was to be expected. The results emphasize once again the hardships inherent in early separation of the mother and her newborn child and her anxiety because of the illness of the baby.

The first child

In this study we have found a general and significantly increased rate of depressed mood within the first week post partum in women having their first child.

Most studies of maternity blues and postnatal depressions do not find this association (2,3,10,11,12,13). However, it is well known from the literature that a first pregnancy/child represents a major change in the life of a woman, jeopardizing her abilities to cope with her new role/identity as a mother, the changes in the relationship with the husband, the changes in her social activities, her working life, education, etc. (17). Little previous experience with infants and a tendency to social isolation from family and friends in modern society increase the need for professional attention/ emotional support to this group of primiparous women. Multiplicatively increased risk of depressed mood/sadness occurs in the first week post partum.

The multivariate analyses showed a multiplicative effect of combinations of the significant factors except for increased need to rest in pregnancy and a staff experienced too busy after delivery. A merging of two or more of these factors will frequently occur. For instance, the birth of a sick child or a premature birth will often be associated with an experience of failure and stress during delivery. The concomitant strain on the mother provokes a great need for emotional support from the staff, i.e. increased vulnerability to a too busy staff.

The woman theoretically most at risk for depressed mood/sadness in the first week after delivery thus would be a woman expecting her first child, who experiences pregnancy as stressful with a need to rest, exceeding the needs of other pregnant women regardless of objective reasons, who is separated from the newborn for reasons of observation or treatment in a paediatric department, and who during the first week after delivery in a hospital department or a clinic experiences the staff as being too busy.

By contrast the woman least at risk for depression within the first week after delivery would be a woman expecting her second child, who feels that she had a normal need to rest in pregnancy, regardless of pregnancy complications, who gives birth with or without complications and experiences the delivery as positive, who is not separated from her newborn baby and who gets enough help and support from the staff.

Conclusions and recommendations

Mood disturbances are very common in the first week after delivery. The literature shows that more than 50% experience the so-called postpartum blues syndrome. Prolonged and/or severe dysphoria occasionally continues and may develop into neurotic depression. This condition may be long lasting and has serious consequences for the relationship to the husband and to the infant. However, neurotic depressions in the months following childbirth also occur without "the blues syndrome".

The total incidence of neurotic depressions is about 15-20%. This is a high number, which is not well known by professionals as the women seldom seek help even if their emotional condition is very disabling not only for themselves but for the marriages and the development of the infants as well. Preventive measures to alleviate these cases of depression are greatly needed.

The multivariate analysis of 2586 women answering a questionnaire three months after delivery identified variables that contributed significantly to depressed mood/sadness in the first week within delivery:

- women expecting their first child;
- women experiencing a need to care for themselves during pregnancy, exceeding the need of other pregnant women;
- ambivalent or negative experience of delivery;
- a too busy staff at the maternity ward;
- insufficient support with breastfeeding;
- child admitted to a paediatric department.

These results underline the importance of birthgiving women's subjective experiences of pregnancy and delivery regardless of objective complications. Moreover, the importance of a sufficient and well educated staff is obvious. In accordance with other studies the emotional strain on the mother caused by an early separation from a newborn baby for reasons of observation or treatment is also documented in this study.

REFERENCES

1. Kamper-Jorgensen, F. et al. Graviditet, fodsel og valg af fodested [Pregnancy, birth and choice of birth place]. Copenhagen, Danish Institute of Clinical Epidemiology (DIKE), 1984.
2. Stein, G.S. The maternity blues. In: Brockington, F.F. & Kumar, R., ed. Motherhood and mental illness. London, Academic Press, 1982.
3. Kumar, R. Neurotic disorders in childbearing women. In: Brockington, F.F. & Kumar, R., ed. Motherhood and mental illness. London, Academic Press, 1982.
4. Cox, J.L. et al. Prospective study of the psychiatric disorders of childbirth. British journal of psychiatry, 140: 111-117 (1982).
5. Pitt, B. Atypical depression following childbirth. British journal of psychiatry, 114: 1325-1335 (1968).
6. Uddenberg, N. & Englesson, I. Prognosis of postpartum mental disturbance. A prospective study of primiparous women and their 4 1/2 year old children. Acta psychiatrica Scandinavica, 52: 160-169 (1978).
7. Kumar, R. & Robson, K. Neurotic disturbance during pregnancy and the puerperium. Preliminary report of a prospective survey of 119 primiparae. In: Brockington, F.F. & Kumar, R. ed. Motherhood and mental illness, London, Academic Press, 1982.
8. Kendell, R.E. et al. Mood changes in the first three weeks after childbirth. Journal of affective disorders, 3: 317-326 (1981).
9. Oakley, A. & Chamberlain, G. Medical and social factors in postpartum depression. Journal of obstetrical gynaecology, 1: 182-187 (1981).
10. Warborg Larsen, F. Maternity blues. A review (this document).
11. Lier, L. Postnatal depressions. A review (this document).
12. Kane, F.J. et al. Emotional and cognitive disturbances in early puerperium. British journal of psychiatry, 114: 99-102 (1968).
13. Ballinger, C.B. et al. Emotional disturbances following childbirth: clinical findings and urinary excretion of cyclic AM.P. Psychological medicine, 9: 293-300 (1979).
14. Cramer, B. A mother's reaction to the birth of a premature baby. In: Klaus, M.H. & Kennell, J.H. ed. Maternal-infant bonding. Mosby, 1976.
15. Paykel, E.S. et al. Life events and social support in puerperal depression. British journal of psychiatry, 136: 339-346 (1980).
16. Playfair, H.R. & Gowers, J.I. Depression following childbirth - a search for predictive signs. Journal of the Royal College of General Practitioners, 31: 201-18 (1981).
17. Breen, D. The birth of the first child. Tavistock, 1975.
18. Uddenberg, N. & Nilsson, A. The longitudinal course of paranatal emotional disturbance. Acta psychiatrica Scandinavica, 52: 160-169 (1975).
19. Klaus, M.H. & Kennell, J.H. Maternal-infant bonding. Mosby, 1976.